

USSR

UDC: 669.715:621.77

BAZHANOV, Yu. M., KAVTAYEV, Ye. Ye.

"Improvement in the Technology of Pressing of Flat Panels of Aluminum Alloys"

Moscow, Tsvetnyye Metally, No 7, Jul 73, pp 74-76.

Abstract: Certain peculiarities of the design and operation of technological equipment are studied. The nature and reasons for the formation of the large-crystal rim around pressed panels of aluminum alloys are discussed. The factors causing this phenomenon include insufficient heating of the matrix set and long-term heating of the panel during hardening, uneven heating of the container cavity, when side surface temperatures may be 50-100° C lower than center temperatures, and insufficient, uneven heating of the tool combined with long-term heating in hardening.

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USSR

UDC 550.831

TOROPIN, S. I., KAYAK, L. K., KANDEL', YA. M. and YEFREMOV, YU. P.

"A Pendulum for Gravimetric Measurements"

USSR Author's Certificate No 360443, Filed 26 Jul 71, Published 16 Jan 73
(from Otkrytiya, Izobreteniya, Promyshlennyye Obratzys, Tovarnyye Znaki, No 7,
Mar (a) 73, Claim No 1636077/26-25)

Translation: A pendulum for gravimetric measurements, containing a shaft with supporting and moving massive carriers, distinguished by the fact that, in order to increase the accuracy of measurement, the shaft is made in the form of a sleeve with a catch also set on one of the carriers.

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Acc. Nr:

AP0054379

Abstracting Service:

CHEMICAL ABST. 6-70

Ref. Code:

UR0365

114579n Glass-nichrome coatings on low-carbon and low-alloy steels. Kavalova, S. S.; Appen, A. A.; Baikova, G. V. (Inst. Khim. Silikat. im. Grebenshchikova, Leningrad, USSR). *Zashch. Metal.* 1970, 6(1), 31-6 (Russ). As the starting materials powders of silicate glasses of various compns., were used which were passed through a sieve of 1600 holes/cm², as well as fine-dispersed metal powders with a grain size of not more than 40 μ . The coatings were applied to steel samples of steels 3, 10, 20, and 12Kh1MF by the enameling method; whereupon they were fired in an inert atm. The formation of coatings contg. various glass binders and fillers (such as, Ni, Cr, nichrome, Fe, Al, and Si) was studied. Glass-metallic coatings A-1 and A-2 were obtained which are characterized by a very much greater impact strength than conventional silicate enamels, which have a high wear resistance, which are thermally stable, as well as stable in boiling water and in a 4% NaCl soln. The coating A-2 is to be considered as being more effective; it has a wide firing range (1150-1270°) and increased chem. stability. Adding Mn and Fe oxides into the compn. of the silicate melts improves their wettability as compared to steel and nichrome, and makes it possible to prep. relatively stable suspensions of

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nichrome powders in the melt. The appearance of new max. on the ionization x-ray diffraction pattern, as taken from coating A-2, indicates the presence of chem. interaction between melt No. 2 and nichrome. Coating A-2 can be recommended for tubes and parts of the app. used in petroleum, shipbuilding, and the heat and power engineering industry. S. A. Mersol —

411

2/2
19831529

KAYAN, V. P.

PART VI. EXPERIMENTAL METHODS

TPRS 55982

15 May 72

BIOHYDRODYNAMIC APPARATUS OF THE CLOSED TYPE FOR STUDYING THE HYDRODYNAMICS OF SWIMMING OF MARINE ANIMALS

[Article by V. P. Kayan and V. Ye. Pavlenko, Kiev; Kiev, Biomekha, Russian, No 3, 1971, Izd-vo Naukova Dumka, pp 121-124]

A biohydrodynamic apparatus of the closed type designed and constructed in 1969 at the Hydromechanics Institute Academy of Sciences Ukrainian SSR is intended for conducting systematic investigations for determining resistance, speed, and other kinematic and hydrodynamic characteristics of the swimming of different fish and other aquatic animals with a length up to one meter. With some design changes in the working part of the tube it can be used for studying the hydrodynamic characteristics of different mechanical models during reversed motion. The design of the apparatus makes it possible to register the elements of motion of the investigated living objects simultaneously in two mutually perpendicular planes, find the limiting swimming speeds and the greatest time of swimming at a stipulated speed, and also during the course of the necessary time carry out investigations of the bioenergetics of fish swimming at different speeds.

The basis for the method for conducting investigations for determining the kinematics of swimming of fish is the principle using unconditioned visual-motor (optomotor) reactions [3]. Biologists have long known that the individual mechanisms of visual perception of animals are associated with their motor reaction. The optomotor reactions of fish are a variety of optokinetic nystagmus, that is, an involuntary movement of the eyes, head or entire body of the fish after visible landmarks moving in its field of view. In such a case one of these landmarks is a coordinate grid plotted in black paint on the bottom of the working part of a biohydrodynamic tube. Accordingly, in the reversed flow the investigated object seemingly stands "in place relative to a fixed observer and the elements of kinematics of swimming of the fish are reliably registered on the motion picture film.

KAYAN, V. P.

PART I. HYDROMECHANICS AND BIOMECHANICS

KINEMATICS AND HYDRODYNAMICS OF SWIMMING OF BLACK SEA CARPISH

[Article by V. Ya. Pavlovsky and V. P. Kayan, Kiev: Kiev. Biol. Akad., Russian, No 5, 1971, 1st ed. Moscow: Nauka, pp 5-11]

TPS 55782
15 May 72

A study of the kinematic and hydrodynamic characteristics of rapidly swimming marine animals for the use of those data in different technical applications is an important direction in hydrobiotic investigations.

Investigations of the kinematics and hydrodynamics of the swimming of Black Sea Gullfish (*Belone belone belone*) were made in the summer of 1968 in the Karadagskaya Division of the Institute of Biology of the Southern Seas Ukrainian Academy of Sciences on an apparatus specially designed for biodynamic studies of the hydrodynamics Institute Ukrainian Academy of Sciences (1). This study is a methodological continuation of investigations of the kinematics and hydrodynamics of swimming of other species of Black Sea fish made earlier at the Institute (2,5). The principal dimensions (L -- length, B -- width, H -- height) and other characteristics of the test objects are given in Table 1.

The gullfish were investigated during reversed motion on the basis of their optomotor reactions. In this method with an increase in the velocity of the oncoming flow the fish strive to maintain their former position relative to fixed reference points. In this case the reference point was a coordinate grid plotted on the bottom of the working chamber of the hydrodynamic apparatus (Grid square measuring 100 x 100 mm, line thickness 0.5 mm). The upper and side walls of the chamber were made of plastic. This made it possible to carry out observations or make motion pictures of the kinematics of swimming of a fish in the reversed flow, being fixed relative to the observer. The working chamber was 1,700 mm long and the cross section was 300 x 300 mm. The velocity of the oncoming flow at each point in the cross section of the working chamber of the

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Ref. Code: ULR0144

USSR

UDC 538.6

KAYANDER, OLEG DENISOVICH, Associate of Riga Institute of Civil Aviation
Engineers

"Super Conducting Ellipsoid of Rotation in a Uniform Field"

Novocherkassk, Izvestiya Vysshikh Uchebnykh Zavedeniy, Elektromekhanika (News of the Institutions of Higher Learning, Electromechanics), No 1, 1970, pp 8-11 (from Izvestiya Vysshikh Uchebnykh Zavedeniy, Elektromekhanika, No 1, 1970, p 111)

Translation: This article contains a study of perturbation of a uniform variable magnetic field by an ideally conducting ellipsoid of rotation. As a result of solving the boundary problem, relations are obtained for the components of the perturbed field at any point in space including the surface of the ellipsoid. It was found that the reaction field of the ellipsoid is characterized in the general case by two coefficients W and W' which depend on the ratio of its halfaxes. Results are obtained from calculating these coefficients for ellipsoids of different shape. There are 3 illustrations and a 4-entry bibliography.

Reel/Frame
19781786

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USSR

UDC 519.2:621.391

KAYATSKAS, A. A.

"Concerning Evaluating the Signal Parameters of a Discrete Communication System"

V sb. Materialy nauchno-tekhn. konferentsii. Leningr. elektrotekhn. in-t
svyazi. Vyp. 2 (Papers of the Scientific-Technical Conference. Leningrad
Electrotechnical Institute of Communication. No 2 -- Collection of Works),
Leningrad, 1970, pp 38-42 (from RZh-Matematika, No 10, Oct 70, Abstract No
10V163)

Translation: It is proposed that the envelope of an ordinary television signal
be considered as the sum of two components: the determined rectangular oscil-
lation with drops to zero in the transmission of line synchronization and the
random rectangular oscillation with an average equal to zero. The dispersion
of the random component and the power of individual components of the deter-
mined and random spectra are evaluated roughly. The possibility of using the
model in engineering calculations is shown. I. Bol'shakov.

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USSR

UDC 621.391:519.2

KAYATSKAS, A. A.

"Problem of Estimating the Signal Parameters of a Discrete Communications System"

Material nauchno-tekhn. konferentsii. Leningr. elektrotekhn. in-t svyazi. Vyp. 2
(Materials of the Scientific and Technical Conference. Leningrad Electrotechni-
cal Communications Institute, Vyp. 2), Leningrad, 1970, pp 38-42 (from RZh-
Radiotekhnika, No 8, Aug 70, Abstract No 8A89)

Translation: Expressions are obtained for the a posteriori probability of the
signal parameters of a discrete communications system. The possibility of using
the relations obtained for synthesis of the synchronization devices of communi-
cations systems is investigated.

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USSR

UDC: 621.396.6-181.48

MAL'TO, V. I., SHADURSKIY, G. P., KAYBANOV, S. G., UTLIK, A. F., RYSEVETS, V. A.

"Organization of Preventive Inspection of Photorepeaters"

Elektron. prom-st'. Nauch.-tekhn. sb. (The Electronics Industry. Scientific and Technical Collection), 1972, No 1, pp 99-100 (from RZh-Radio-tehnika, No 8, Aug 72, Abstract No 8V264)

Translation: A structure is proposed for the organization of services in an enterprise for carrying out preventive maintenance on photorepeaters. Resumé.

MEDICINE

Aerospace Medicine

USSR

KAYBYSHEV, M. S.

"Analysis of Work With Use of Proposed More Precise Methods of Preflight Examination and Tables of Pulse Norms"

Moscow, Voprosy Mediko-Biologicheskikh Issledovaniy. Materialy Konferentsii Molodykh Nauchnykh Rabotnikov Mediko-Biologicheskogo Fakul-teta (Aspects of Biomedical Research. Materials of a Conference of Young Scientific Workers of the Biomedical Faculty), Ministerstvo Zdravookhraneniye, 1970, 93 pp, pp 83-84

Abstract: A precise and reliable method of preflight examination of flight personnel by aviation medical workers in order to prevent ill members of flight crews from embarking on a flight has been proposed and was tested from October 1966 to October 1969. The method is based on the use of a 24-hour table of the pulse norm, determination of the number of heartbeats a minute, data obtained in interrogations, dynamic observations, and so on. As a result of the improved quality of examinations at the pre-flight medical point, the number of cases of illness discovered among flight crews increased.

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USSR

KAYBYSHEVA, L.

"Ice, Ice, Ice..."

Moscow, Nedelya, 23 Feb - 1 Mar 70, pl2

Abstract: Mikhail Propp, Yevgeniy Gruzov, and Aleksandr Fushkin, biologists and aqualung divers from Leningrad Zoological Institute made two expeditions to the Antarctic to study the flora and fauna of the water under the Antarctic ice. In their underwater diving, the scientists discovered three varieties of animal life still unknown to science, as well as the previously unsuspected existence of beautiful ice caves in the icebergs. They were amazed to find two to three kilograms of animal life per square meter on the ice; its food source was the verythin layer of diatoms covering the ice. It became clear to them that ice, unlike snow, does not block light rays, and this is important for photosynthesis. They concluded that the diversity and vast quantity of animal life in the world ocean is affected more by light than by temperature conditions. This may explain the resemblance between Antarctic fauna and the fauna of tropical waters. During the first expedition, 1965-1966, the biologists completed 162 dives. Their experiences are described in Propp's book, S. Akvalangom v Antarktike (In the Antarctic with an Aqualung) which was published last year. Yevgeniy Gruzov is now preparing for a third expedition, which will extend from the fall of 1970 to the spring of 1972.

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KAYBYSHEVA, L., Nedelya, 23 Feb-1 Mar 70, p 12

By staying in the Antarctic during the polar winter, he hopes to confirm their premise on the role of light in the life of the Antarctic marine population. It is light which is the chief variable factor here; the temperature and salinity of the water are constant. What will happen to the plants and animals during the winter period of light-starvation? Will they die or undergo a period of anabiosis? When is the season for regeneration of life and what determines it? In the words of Ye. Tolstikov, Deputy Chief of the Main Administration of the Hydrometeorological Service, USSR Council of Ministers, "Polar biologists have established the species composition and geographical distribution of marine algae, phytoplankton zooplankton... This research shows that a distinctine complex of animal life has been formed in the southern polar region of the Earth, allowing it to be distinguished as an individual zoogeographical zone..."

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1/2 022 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--LIFE OF A QUARTZITE CRUCIBLE FOR A 12 METRIC TON INDUCTION FURNACE
-U-
AUTHOR--(C5)--KAYBICHEVA, M.N., PLATONOV, B.P., PLATONOV, YU.B., BERKOVSKIY,
I.M., ROPATOVSKIY, M.I.
CCOUNTRY OF INFO--USSR
SOURCE--LITEINCE PROIZVOD. 1970, (4), 33-6
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--INDUCTION FURNACE, QUARTZ, THERMAL STABILITY, MAGNESIUM OXIDE,
CALCIUM OXIDE, IRON OXIDE, ALUMINUM OXIDE, SILICON DIOXIDE

CENTREL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3004/1932

STEP NO--UR/0128/70/000/004/0033/0036

CIRC ACCESSION NO--AP0132194

UNCLASSIFIED

272 022

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132194

ABSTRACT/EXTRACT--(U) GP-9- ABSTRACT. TWO QUARTZITES FOR MAKING
INDUCTION FURNACE CRUCIBLES WERE COMPARED AS TO THEIR ENDURANCE,
FRIABILITY, AND HEAT RESISTANCE: DOMESTIC AND SWEDISH, WHOSE COMPS.
WERE SIO SUB2 98.10, 97.34, AL SUB2 0 SUB3 0.59, 0.95, FE SUB2 0 SUB3
0.31, 0.26, CAO 0.79, 0.26, MGO MINUS, 0.03, AND M SUB2 0 (METAL OXIDES)
MINUS, 0.24, LOSS ON IGNITION 0.10, 0.46 WT. PERCENT, RESP. THE
CRUCIBLES MADE FROM THE DOMESTIC QUARTZITE WERE MORE FRIABLE AFTER
HEATING FOR 2 HR AT 1450DEGREES THAN THE SWEDISH CRUCIBLES, (PROBABLY
BECAUSE THE DOMESTIC QUARTZITE HAD MORE SIO SUB2), AND THE D. WAS 2.530
AND 2.360 G-CM PRIME3, RESP. THE ADDN. OF 1.0-2.0PERCENT OF B SUB2 0
SUB3 DECREASED THE D. TO 2.459, AND 2.330 G-CM PRIME3, RESP. THE
CRUCIBLES WITHSTOOD 321 AND 309 MELTINGS, RESP.

UNCLASSIFIED

Instrumentation and Equipment

USSR

UDC 620.172.251.05

KAYBYSHEV, O. A., MARKELOV, A. A., and GORDIYENKO, YE. G., Ufa Aviation Institute

"Device for Determining Metal Ductility Over a Wide Range of Deformation Rates and Temperatures"

Moscow, Zavodskaya Laboratoriya, Vol 39, No 7, Jul 73, pp 880-881

Abstract: A new device is described which makes it possible to determine the dynamic ductility of metals by tensile testing in a wide range of deformation rates and temperatures. Design of this device provides heating rates from 15 to 500° C/sec with or without subsequent isothermal soaking. VT9 titanium alloy was tested on this new device and on an MR-05-1 tensile testing machine at deformation rates of $1 \cdot 10^3$ and $1 \cdot 10^{-1} \text{sec}^{-1}$, respectively, and at temperatures of 850, 900, 950 and 1000° C. In upset testing of VT9 alloy in the selected range of deformation rates, the effect of rate on ductility was not revealed. Macrocracks were not detected even at the highest deformation rates. Results achieved with this new device showed that the ductility of an alloy is highly dependent on deformation rate and temperature. One figure, two bibliographic references.

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USSR

UDC 669.5.669.018.2

KAYBYSHEV, O. A., Ufa Aviation Institute, Chair of General Technology and of the Science of Metals

"Peculiarities of the Mechanism of Superplastic Deformation of Pb-Sn Eutectic Alloy"

Ordzhonikidze, Izvestiya Vysshikh Uchebnykh Zavedeniy, Tsvetnaya Metallurgiya, No 6, 1973, pp 120-124

Abstract: The crystallographic sliding at superplastic deformation of the Pb-Sn eutectic alloy was experimentally investigated on specimens prepared from Sn+38%Pb alloy, the structure of which after rolling consisted of fine equiaxial α -phase grains on Pb base with face-centered cubic lattice and of β -phase grains on white tin base with tetragonal lattice, the grain size being 1.2 μ m. The results are analyzed by reference to (011) α -phase and (211) β -phase polar figures at different deformation rates and by reference to the σ - ϵ diagram. The grain of both phases showed crystallographic sliding at superplastic deformation. In the interval of maximum velocity response of the alloy, according

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KAYBYSHEV, O. A., Izvestiya Vysshikh Uchebnykh Zavedeniy, Tsvetnaya Metallurgiya, No 6, 1973, pp 120-124

to the analysis of the deformation texture, a change of the sliding mechanism from laminar to multiple character takes place in both phases. The velocity interval of the superplasticity effect in the Pb-Sn eutectic alloy is considerably narrower than in the Zn-Al alloy, where the sliding occurs principally in grains of the Zn phase and the Al phase practically is not participating in the deformation. Two figures, ten bibliographic references.

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USSR

UDC 669.5'71:539.214

KAYBYSHEV, O. A., KAZACHKOV, I. V., ROZENVERG, V. M., Ufa Aviation Institute
imeni Ordzhonikidze

"Change in Structure and Peculiarities of Crystallographic Slipping During
Superplastic Deformation of the Alloy Zn Plus 22% Al"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 36, No 6, Dec 73, pp
1235-1241.

Abstract: The influence of structure on the mechanical properties of the alloy Zn plus 22% Al is studied under superplastic flow conditions. As the grain size increases, the maximum value of the high-speed stress sensitivity factor for flow and plasticity is shifted to lower deformation rates. Analysis of the microstructure shows that the growth of grains resulting from deformation increases with decreasing deformation rate. The correlation is experimentally shown between the mechanical properties of alloys under superplastic flow conditions and texture formation in the beta phase as a function of grain size and deformation rate.

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USSR

UDC 669.12:539.214

KAYBYSHEV, O. A., and MARKELOV, A. A., Ufa Aviation Institute

"Superplasticity in Technical Nickel"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya Metallurgiya, No 7, 1973, pp 119-121

Abstract: A study was made of the plasticity dependence of NP-2 brand nickel in a wide range of temperatures and deformation rates, on the initial structure. A diversity in the initial structure was attained at the expense of producing nickel with essentially different grain sizes. The notable difference in the character of the change of actual stresses in the deformation process depending on the initial condition is demonstrated. The creation of a superfine grained structure in nickel ($d=4\mu\text{m}$) considerably changes its strength and plasticity indices. If the plasticity of large grained nickel depends little on the deformation rate, then on fine grained nickel, at 800°C and $\dot{\epsilon}=5\cdot 10^{-3}\text{ s}^{-1}$ deformation rates, a clearly expressed plasticity maximum of 180% is observed. Probably, this can be explained by the fact that the structure of technical nickel undergoes considerable changes in the deformation process due to the high growing rate of the grain which impedes the obtaining of a higher plasticity. Three figures, five bibliographic references.

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USSR

UDC 620.172.251.2.05

KAYBYSHEV, O. A., and MARKELOV, A. A., Ufa Aviation Institute

"Unit for Testing Ultraductile Materials"

Moscow, Zavodskaya Laboratoriya, Vol 39, No 6, Jun 73, pp 753-755

Abstract: The authors developed a machine, the MP-05-1, for testing the ultra-ductility of materials over a wide interval of deformation rates and temperatures. With this machine the deformation rate can be varied from 0.25 to 200 mm/min, and by adding the reducing gear from an IMASH-5B-65 the deformation rate can be reduced to 0.005 mm/min. Temperature can be maintained with an accuracy of $\pm 4^{\circ}\text{C}$ up to 500°C and $\pm 3^{\circ}\text{C}$ from 500 to 1000°C . A diagram illustrates the functioning of the MP-05-1 unit. 2 figures, 5 bibliographic references.

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USSR

UDC 669.018.45-15:539.214

KAYBYSHEV, O. A., MATVEYEV, L. V., GUSEVA, S. P., and MARKELOV, A. A.,
~~Ufa Aviation Institute~~

"Relation Between the Structure and Properties of EI929 Alloy"

Moscow, IVUZ. Chernaya Metallurgiya, No 5, 1972, pp 125-128

Abstract: An investigation is made of the effect which structure obtained by various kinds of heat treatment has on the properties of EI929 heat resistant alloy. Open and vacuum-arc melts were studied. The chemical composition of both melts corresponded to technical specifications. The hardening γ' -phase was analyzed: the amount of γ' -phase, mean grain size and lattice parameter were determined. The structure and properties of the alloys are compared. The high-temperature strength of the alloy can be attributed to grain size, while the ductility is a function of the distribution and degree of dispersion of the hardening γ' -phase.

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USSR

UDC 629.78.018.4:620.1

KAYBYSHEV, O. A., NIZAMOV, R. G., GAZIYEV, A. A.

"Experimental Setup and Procedure for Measuring the Dynamic Properties of Metals"

Tr. Ufim. aviats. in-ta (Works of the Ufa Aviation Institute), 1972, vyp. 29, pp 170-180 (from RZh-Raketostroyeniya, otdel'nyy vypusk, No 12, Dec 72, Abstract No 12.41.247)

Translation: The experimental device permitting investigation of the effect of high-speed deformation on the structure and properties of metals in the deformation rate range of 10^2 seconds to 10^4 seconds is described. The dynamic properties were measured during the process of high-speed deformation considering wave processes by two independent methods: strain gaging and streak photography. The practical inertialess measuring and recording apparatus were used: electric resistance strain gages, a pulsed cathode oscillograph and superhigh speed SFR-2M streak camera. There are 4 illustrations and an 8-entry bibliography.

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USSR

UDC 539.3/.5

EPSHTEYN, G. N. and KAYBYSHV, O. A.

"High-Speed Deformation and Structure of Metals"

"Metallurgiya," Moscow, 1971, 200 pages, illustrated, price 1 ruble, 32 kopeks (from RZh-Fizika, No. 9, 1971, Abstract No. 9E464)

Translation: Chapter 1, Modern methods of high-velocity deformation. Chapter 2, Sliding under high-velocity deformation conditions. Chapter 3, Twinning under high-velocity deformation conditions. Chapter 4, Strengthening of metals in high-velocity deformation. Chapter 5, High-velocity deformation and phase transformations in metals.

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USSR

UDC: 539.4.62-23

BATYREV, G. R., KAYBYSHEVA, G. A., Engineers

"Reasons for Embrittlement of Type 20KhMFBR Steel"

Moscow, Teploenergetika, No 4, Apr 72, pp 70-72.

Abstract: Five commercial melts of type 20KhMFBR steel were studied to determine the reasons for observed inconsistent low impact toughness. The specimens used were rolled bars 95 mm in diameter. The chemical composition of all melts studied was within the limits for the type. Following simultaneous heat treatment, the short-term mechanical properties of the melts were found to be significantly different. It was found that the austenite grain dimensions differed significantly from melt to melt, apparently resulting from the fact that the temperature interval of intensive austenite grain growth is quite near the recommended normalization temperature. Enlargement of the austenite grain during normalization increases the cold shortness threshold of the steel and may cause some decrease in strength and ductility characteristics. It was found that repeated heat treatment (normalization at a lower temperature with subsequent tempering) can significantly increase the ductility and impact toughness of the steel, even if the grain size has increased.

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USSR

UDC: 621.791.947

NAZARENKO, O. K., KAYDALOV, A. A., AKOP'YANTS, K. S., LOKSHIN, V. Ye.

"Periodicity of Transfer of Metal During Cathode Ray Welding"

Kiev, Avtomaticheskaya Svarka, No 8, Aug 73, pp 75-76.

Abstract: The following mechanism is proposed for metal transfer during cathode-ray welding. The primary force acting on the liquid metal is the recoil reaction arising upon partial evaporation of the metal by the electron beam. Since the recoil reaction is directed perpendicular to the surface of the melted metal, its motion along the walls of the channel is possible only when the surface is curved so that a sufficient tangential component of recoil reaction arises. Curvature of the surface of the melted metal occurs as follows. At a certain film thickness of liquid metal on the leading wall of the channel, waves arise on the free surface of the film, the amplitude of the waves increasing as film thickness increases. At a certain critical thickness, the area of the curved surface is sufficient for the recoil reaction along the forward wall to cause movement of a given curve into the depth of the channel, capturing the main mass of the melted metal located below. The amplitude of the wave increases, accelerating the

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USSR

Nazarenko, O. K., Kaydalov, A. A., Akop'yants, K. S., Lokshin, V. Y.e, Kiev, *Avtomaticeskaya Svarka*, No 8, Aug 73, pp 75-76.

movement. This wave is the main motive force of metal transfer.

1/2 024 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--TWO REGGEON CUTS IN SCATTERING PROCESSES AT HIGH ENERGIES -U-

AUTHOR-(02)-KAYDALOV, A.B., KARNAKOV, B.M.

COUNTRY OF INFO--USSR

SOURCE--YAD. FIZ. 1970, 11(1), 216-31

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--PARTICLE INTERACTION, REGGE POLE, SCATTERING AMPLITUDE,
SCATTERING CROSS SECTION, PION, PHOTONUCLEAR REACTION, CHARGE EXCHANGE,
NEUTRON SCATTERING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1980/0356

STEP NO--UR/0367/70/011/001/0216/0231

CIRC ACCESSION NO--AP0048629

UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0048629

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. GRIBOV'S DIAGRAM METHOD (1967) ENABLES ONE TO INVESTIGATE THE ESSENTIAL PROPERTIES OF MOVING CUTS AND TO EST. THEIR CONTRIBUTIONS TO THE ASYMPTOTIC BEHAVIOR OF THE SCATTERING AMPLITUDES. THIS METHOD IS APPLIED TO ESTNS. OF THE CONTRIBUTIONS FROM MOVING CUTS TO THE AMPLITUDES OF VARIOUS 2 PARTICLE PROCESSES, WHERE SPIN OF THESE PARTICLES IS TAKEN INTO ACCOUNT. CONDITIONS FOR THE REGGEIZED ABSORPTIVE MODEL TO THE APPLICABLE ARE DISCUSSED. A FORMULA IS DERIVED WHICH MAKES IT POSSIBLE TO EST. THE CROSS SECTIONS OF SUCH PROCESSES WHICH HAVE NO CONTRIBUTION FROM THE REGGE POLES (E.G. THE DOUBLE CHARGE EXCHANGE). THERE ARE CONSIDERED IN DETAIL THE CONTRIBUTIONS FROM MOVING CUTS WITHOUT A DEFINITE PARITY TO THE AMPLITUDES OF SUCH PROCESSES WHICH ENABLE MAKING A COMPARISON WITH EXPT.: N-P CHARGE EXCHANGE, PSEUDOSCALAR MESON PHOTOPRODUCTION, AND PRODUCTION OF VECTOR MESONS IN $\pi^+ N$ COLLISIONS AT SMALL MOMENTUM TRANSFER. THESE CONTRIBUTIONS ARE LARGE IN THE REGION OF SMALL VALUES OF Q^2 . RESULTS OF CALCNS. WITHOUT ANY ADJUSTABLE PARAMETERS GIVE FOR THE N-P CHARGE EXCHANGE AND GAMMA P YIELDS π^+ POSITIVE N PROCESS AT Q^2 EQUALS 0 VALUES VERY CLOSE TO THE EXPTL. ONES. THE FEATURES OF THESE PROCESSES IN THE REGION OF SMALL Q^2 CAN BE OBTAINED WITHOUT ANY ASSUMPTION ON THE CONSPIRACY OF THE π POLE. ALSO THE SUPERCONVERGENT SUM RULES FOR THE REGGEON PRODUCTION AMPLITUDES ARE CONSIDERED.

FACILITY: INST. TEOR. EKSP. FIZ., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 621.385.29.032.11

ANDRBYEVA, L.I., KAYDALOV, S.A., STSPANOV, B.M., TEREKHOV, B.I.

"Use Of Laser For Study Of Pulse Characteristics of Coaxial Photocells"

V sb. Izpol'z. optich.kvant.generatorov v sovrem. tekhn. i med. Ch. 2-3 (Use Of Lasers In Contemporary Technology And Medicine. Parts 1-2--Collection Of Works), Len., 1971, pp 55-56 (from RZh:Elektronika i yeye prizeneniye), No 2, Feb 72, Abs.2A197)

Translation: The technique is described as well as the results of measurements of the pulse characteristics of coaxial photoelements (FEK), the FEK-09KP, FEK-14KP, and FEK-15KM, with the aid of a laser operating in a regime of synchronization of modes at a wavelength of 1.06 micrometer. With the aid of an optical divider, one and the same signal was directed to a number of FEK and to the input of a Type FER-2 electrooptical photochronograph and a Type TPI-1 calorimeter. The results of the oscillography of the electrical pulses from the output of the FEK were compared with the photochronograms obtained with identical sweep duration $\sim 30 \pm 50$ nsec. An analysis is made of the time resolution of the channel of oscillographic registration of pulses. 2 ill. 10 ref. N.S.

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1/2 009 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--HYDRATED MERCURY AND CADMIUM FLUORIDES -U-
AUTHOR--(05)-POLISHCHUK, S.A., KHMELEVA, M.G., ZADNEPROVSKIY, G.M.,
KAYDALOVA, T.A., KUPTSOVA, N.V.
COUNTRY OF INFO--USSR
SOURCE--J. LESS-COMMON METALS 1970, 21(1), 63-9
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--MERCURY COMPOUND, CADMIUM COMPOUND, FLUORIDE,
THERMOGRAVIMETRIC ANALYSIS, HYDRATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3005/0939 STEP NO--NE/0000/70/021/001/0063/0069
CIRC ACCESSION NO--AP0133025

UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0133025

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SOLY. RELATIONS IN THE HGO-HF-H SUB2 O SYSTEM WERE INVESTIGATED AT 25DEGREES IN THE 5-75PERCENT HF CONCN. RANGE. THE COMPN OF THE SOLID PHASES FORMED WAS ESTABLISHED BY THE USE OF SCHREINEMAKER'S METHOD. TWO COMPODS. WERE ISOLATED: HGF SUB2 .2H SUB2 O, AND ITS HYDROLYSIS PRODUCT, HGOHF. IN THE CDOHF-H SUB2 O SYSTEM, CDF SUB2 .2H SUB2 O WAS ISOLATED AT SMALLER THAN OR EQUAL TO 10PERCENT HF CONCN. ONLY. THE COMPODS. OBTAINED WERE INVESTIGATED BY SEVERAL PHYSICOCHEM. METHODS. THERMOGRAVIMETRIC ANAL. SHOWED A LOW THERMAL STABILITY OF HGF SUB2 .2H SUB2 O AND CDF SUB2 .2H SUB2 O. THEIR SPECTRA INDICATED THE PRESENCE OF STRONG H BONDS IN THESE HYDRATES. BY THE USE OF X RAY POWDER TECHNIQUES, THE 2 HYDRATES WERE SHOWN TO BE ISOTYPICAL AND PRESUMABLY, ISOSTRUCTURAL. THEY ARE ORTHORHOMBIC, WITH SPACE GROUPS PNMM OR PNM2 SUB2, AND 8 FORMULA UNITS PER UNIT CELL, WITH CELL PARAMETERS: A 9.931 PLUS OR MINUS 0.003, B 7.078 PLUS OR MINUS 0.002, C 8.767 PLUS OR MINUS 0.003 ANGSTROM FOR CDF SUB2 .2H SUB2 O AND A 10.002 PLUS OR MINUS 0.002, B 7.151 PLUS OR MINUS 0.001, C 8.891 PLUS OR MINUS 0.001 ANGSTROM FOR HGF SUB2 .2H SUB2 O.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--SYNTHESIS AND X RAY DIFFRACTION CHARACTERISTICS OF FLUOROZIRCONATES
OF DIVALENT METALS -U-
AUTHOR--(04)--CAVIDOVICH, R.L., LEVCHISHINA, I.F., KAYDALOVA, T.A., BUSLAEV,
YU.A.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(3), 493-7.
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--X RAY DIFFRACTION ANALYSIS, COMPLEX COMPOUND, FLUORIDE,
ZIRCONATE, CADMIUM COMPOUND, CHEMICAL SYNTHESIS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1994/1886 STEP NO--UR/0363/70/006/003/0493/0497
CIRC ACCESSION NO--AP0115705
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--13NDV70

2/2 014

CIRC ACCESSION NO--AP0115705

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CONDITIONS WERE INVESTIGATED FOR SYNTHESIZING INDIVIDUAL COMPLEX ZR FLUORIDES WITH BIVALENT METALS AND THE X RAY DIFFRACTION CHARACTERISTICS FOR THE SALTS PREPARED. ARE PRESENTED. THE STUDY OF THE INTERACTION BETWEEN THE FLUORIDES OF THE BIVALENT TRANSITION METALS AND THE ZR SUB2 SOLN. IN HF SHOWED THAT SALTS OF ZRF SUB6 PRIME2 NEGATIVE FORM AT THE MOLAR RATIO EQUAL TO 1:1. THE ONLY COMPOUND WHICH IT WAS NOT POSSIBLE TO SYNTHESIZE WAS CO SUB2 ZRF SUB8.6H SUB2 O. ALL SYNTHESIZED HEXAFLUOROZIRCONATES ARE SOL. IN WATER. THE PRESENCE OF A LARGE EXCESS OF THE HF PREVENTS THE FORMATION OF THE OCTAFLUORO SALT. X RAY DIFFRACTION STUDIES SHOW THAT A LARGE ISOSTRUCTURAL SERIES OF THE COMPLEXES IS FORMED. THE UNIT CELL PARAMETERS OF COMPLEX FLUORIDES OF THE COMPOUND MZRF SUB8.6H SUB2 O WERE DETERMINED; THE LATTER ARE ISOSTRUCTURAL WITH FESIF SUB6 TIMES 6H SUB2 O. ALSO, THE SYNTHESIZED OCTAFLUOROZIRCONATES OF THE BIVALENT METALS ARE INDIVIDUAL CHEM. COMPOUNDS. THE X RAY DIFFRACTION PATTERNS FOR M SUB2 ZRF SUB8.12H SUB2 O DIFFER FROM THOSE FOR THE HEXAFLUOROZIRCONATES AND FOR THE CORRESPONDING FLUORIDES OF THE BIVALENT METALS. FACILITY: OTD. KHIM. DAL'NEVOST. FILIALA IM. KOMAROVA, VLADIVOSTOK, USSR.

UNCLASSIFIED

USSR

UDC 621.377.622.322.4 621.377. 622.25
181.48. 621.3.017.7 536.582

DUL'NEV, G. N., KAYDANOV, A. I., et al.

"Experimental Study of Thermal Modes of Accumulator Using Multiple-Aperture Ferrite Plates (MFP)"

Elektron. Tekhnika. Nauch. - Tekhn. Sb. Mikroelektronika [Electronic Technology. Scientific-Technical Collection. Microelectronics], No. 5 (26), 1970, pp 133-142. (Translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No. 5, 1971, Abstract No. 5B122 by TR).

Translation: An analysis is presented of the thermal mode of a diode assembly, and its permissible temperature is determined: it is established that the temperature field is practically even and that the reliability of operation of the diode is characterized, not by the permissible temperature of the surrounding medium, but rather by the temperature of the assembly itself. A description is presented of the experimental installation, along with the results of measurement of the temperature field of the accumulator in various operating modes. Recommendations are given for improvement of the thermal mode of the accumulator. 5 figs, 5 biblio refs.

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1/2 015 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--SELECTION OF COORDINATE FUNCTIONS WHEN SOLVING BOUNDARY VALUE
PROBLEMS BY THE GALERKIN METHOD -U-
AUTHOR--KAYDANOV, A.I. *K*
COUNTRY OF INFO--USSR
SOURCE--INZHENERNO FIZICHESKII ZHURNAL, VOL. 18, FEB. 1970, P. 309-315
DATE PUBLISHED-----70

SUBJECT AREAS--MATHEMATICAL SCIENCES, PHYSICS
TOPIC TAGS--BOUNDARY VALUE PROBLEM, DIFFERENTIAL EQUATION SOLUTION,
APPROXIMATION METHOD, CONDUCTIVE HEAT TRANSFER

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/0404 STEP NO--UR/0170/70/018/000/0309/0315
CIRC ACCESSION NO--AP0111597
UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--300C770

CIRC ACCESSION NO--AP0111597

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DEVELOPMENT OF A PROCEDURE FOR SELECTING THE COORDINATE FUNCTION WHEN USING THE GALERKIN METHOD FOR SOLVING BOUNDARY VALUE PROBLEMS. (AN APPROXIMATE SOLUTION BY THE GALERKIN METHOD HAS THE FORM OF A LINEAR COMBINATION OF COORDINATE FUNCTIONS). THE PROCEDURE IS DEMONSTRATED FOR THE HEAT CONDUCTION EQUATION OF AN ANISOTROPIC HOMOGENEOUS PARALLELEPIPED WITH AN INTERNAL HEAT SOURCE. IT IS SHOWN THAT BY USING THE PROCEDURE PROPOSED, THE FIRST APPROXIMATION ACCURACY OF THE GALERKIN METHOD CAN BE SUBSTANTIALLY INCREASED. FACILITY: LENINGRADSKII INSTITUT TOCHNOI MEKHANIKI I OPTIKI, LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC[537.226+537.311.33]:[537+535]

YERASOVA, H. A., KAYDANOV, V. I., NOVICHKOV, A. I., and NURONSKIY, A. B.

"Apparatus for High-Speed Measurement of Thermoelectric Parameters of Semiconductor Materials in 150-500° K Temperature Range"

Tr. Leningr. politekhn. in-t (Works of Leningrad Polytechnic Institute), 1971, No 325, pp 10-16 (from RZh-Fizika, No 1, Jan 72, Abstract No 1YEl469 by authors)

Translation: The apparatus is intended for simultaneous determination of specific electrical and thermal conductivity and the coefficient of thermoelectromotive force in a wide temperature range. Changes have been made in the construction of the device, as compared with the "λ" calorimeter, which permit reduction to the minimum of the influence of parasitic heat exchange and contact thermal resistances. An evaluation of the errors shows that in the determination of the thermoelectric coefficient of the materials studied the error connected with the accuracy of the measurements, thermocouple calibration, and geometry of the samples does not exceed 4-5%.

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USSR

UDC [537.226+537.311.33]:[537+535]

CHERNIK, I. A., and KAYDANOV, V. I.

"Mobility of 'Light' and 'Heavy' Holes and Interband Scattering in Lead Telluride"

Tr. Leningr. politekhnich. in-t (Works of Leningrad Polytechnic Institute), 1971, No 325, pp 43-56 (from RZh-Fizika, No 1, Jan 72, Abstract No 1YE1450 by authors)

Translation: An analysis is made of experimental data on temperature and concentration dependences of coefficient of electrical conductivity, thermoelectromotive force, transverse Nernst-Ettingshausen effect, and Hall coefficient in that range of current carrier concentrations and temperatures where holes of both types make a comparable contribution to transport phenomena. A calculation of hole distribution between extrema of "light" and "heavy" bands is made as a function of their total concentration and temperature. Data are also given regarding the relation of "light" and "heavy" hole mobilities as a function of experimental temperature. At the same time it is shown that in the region of helium temperatures the ratio of "light" to "heavy" hole mobilities is close to unity. As a result of the analysis of concentration dependences σ , α , and Q in the region of two-band conduction at $T=120^\circ\text{K}$ the

USSR

CHERNIK, I. A., and KAYDANOV, V. I., Tr. Leningr. politekhnich. in-t, 1971,
No 325, pp 43-56

contributions of "light" and "heavy" holes to the kinetic coefficient are determined. The important role of interband scattering is shown, and an evaluation of its intensity is made. Bibliography with 13 titles.

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USSR

UDC 621.317.799:537.311.3

YERASOVA, N.A., KAYDANOV, V.I., NOVICHKOV, A.I., MURCHSELY, A.B.

"Equipment For High-Speed Measurement Of the Thermoelectric Parameters Of Semiconductor Materials In The Temperature Range 150-500° K"

Tr. Leningr. politekh. in-t (Works Of The Leningrad Polytechnical Institute), 1971, No 325, pp 10-16 (from RZh:Elektronika i yeye primeneniye, No 2, Feb 72, Abstract No 2B77)

Translation: The equipment, in which a normal regime of the second kind is used, is intended for simultaneous determination of the thermal conductivity, the specific electrical conductance, and the coefficient of thermo-emf over a wide range of temperature. The error in determining the thermoelectric coefficient does not exceed 4-5 percent. 2 ill. 4 ref. Summary.

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1/2 023 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--EFFECT OF A BISMUTH TELLURIDE IMPURITY ON THE BAND STRUCTURE OF TIN
TELLURIDE -U-
AUTHOR--(05)-BOROVIKOVA, R.P., DUDKIN, L.D., YERASOVA, N.A., KAZANSKAYA,
O.A., KAYDANOV, V.I.
COUNTRY OF INFO--USSR
SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(1) 231
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--BISMUTH, ELECTRICAL CONDUCTIVITY, TIN COMPOUND, TELLURIUM
COMPOUND, ACTIVATION ENERGY, ENERGY BAND STRUCTURE, HALL CONSTANT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1988/0578

STEP NO--UR/0449/70/004/001/0231/0231

CIRC ACCESSION NO--AP0105561

UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0105561

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TEMP. DEPENDENCE OF ELEC. COND.; THERMAL EMF., THE HALL CONST., AND THE TRANSVERSE NERNST ETTINGSHAUSEN EFFECT WAS STUDIED EXPTL. IN SN SUBI NEGATIVEX BI SUBX TE (0 SMALLER THAN OR EQUAL TO TIMES SMALLER THAN OR EQUAL TO 0.1) SOLID SOLNS. AT 80-500DEGREES K. IN COMPARISON TO PURE SNTE, A DECREASE IN HALL MOBILITY IS NOTICED AND A MAX. APPEARS ON THE TEMP. DEPENDENCE CURVE OF THE HALL CONST. THERE ARE 2 POSSIBLE EXPLANATIONS FOR THESE AND OTHER OBSD. CHANGES: (1) THE ADDN. OF BITE LOWERS THE ENERGY GAP BETWEEN REGIONS OF LIGHT AND HEAVY HOLES; (2) IMPURITY (DONOR) LEVELS OF BI SPLIT INTO AN IMPURITY BAND LOCATED BELOW THE VALENCE BAND. IN BOTH CASES, THE ADDN. OF BI HAS LITTLE INFLUENCE ON THE CONC. OF HOLES.

UNCLASSIFIED

USSR

UDC 551.596;534-143

VOYTSEKHOVSKAYA S. L., KAYDANOV, YU. L., SAPRYKIN, V. A.

"Problem of Representing Fields by the Sampling Method"

Tr. 2-y Vses. shkoly-seminara po stat. gidroakustike (SG-2) (Works of the Second All-Union Seminar on Statistical Hydroacoustics (SG-2)), Novosibirsk, Nauka, 1971, pp 32-52 (from RZh-Fizika, No 12, Dec 72, Abstract No 12Zh613)

Translation: The representation of hydroacoustic fields given in multidimensional spaces by the sampling method is, in practice, a problem which is difficult to realize. The authors obtained a representation by the sampling method of some classes of fields, including the field having axial symmetry. The field spectrum is given by a finite function with a maximum in the form of an n-dimensional step with its center at the coordinate origin. A study was made of the general case in which the field spectrum is represented in the form of a quadratic function and also the case of applying the results obtained to represent fields permitting approximation of the spectrum in the form of a quadratic function. The authors present an example of representing the correlation function of the field and also evaluating the errors in representing the field by the sampling method.

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USSR

UDC: 519.21

KAYDANOV, Yu. L., PADERNO, V. I., SAPRYKIN, V. A.

"On the Problem of Describing Random Anisotropic Fields"

V sb. Metody predstavleniya i apparaturn. analiz sluchayn. protsessov i poley. 3-y Vses. simposium Sekts. 2 (Methods of Representation and Instrumental Analysis of Random Processes and Fields. Third All-Union Symposium. Section 2), Leningrad, 1970, pp 27-29 (from RZh-Kibernetika, No 7, Jul 71, Abstract No 7V149)

Translation: Let $R(\bar{x}, \bar{y})$ (\bar{x}, \bar{y} are points in an n -dimensional Euclidean space R^n) be a correlation function of the random field

$$\psi(\bar{x}) = \exp\{-\langle A\bar{x}, \bar{x} \rangle\} \int_{R^n} n(\bar{y}) K(\bar{x} - \bar{y}) d\bar{y}$$

where $n(\bar{y})$ is "white" noise on R^n .

$$K(\bar{x}) = F^{-1} \{ \exp[-\langle B\Lambda^{-1}(\bar{\omega} - \bar{\Omega}), \Lambda^{-1}(\bar{\omega} - \bar{\Omega}) \rangle] \},$$

F^{-1} is an inverse Fourier transform operator, A and B are positively defined matrices, Λ is a diagonal matrix with elements $\Omega_1, \dots, \Omega_n$. An algo-

KAYDANOV, Yu. L. et al., Metody predstavleniya i apparaturn. analiz sluchayn. protsessov i poley. 3-y Vses. simpozium. Sekts. 2, Leningrad, 1970, pp 27-29

rithm is discussed for construction of eigenfunctions and eigenvalues of the correlation kernel $R(\vec{x}, \vec{y})$ on $R^m \times R^n$. M. Yadrenko.

USSR

UDC 612.821.6+616.831.311

KAYDANOVA, S. I., MEYERSON, Ya. A. and TRAUGOTT, N. N., Institute of Evolutionary Physiology and Biochemistry, USSR Academy of Sciences and Psychoneurological Institute imeni V. M. Bekhterev, Leningrad

"On the Role of the Parietal Area of the Human Brain in the Analysis and Synthesis of Complex Stimuli"

Moscow, Zhurnal Vysshey Nervnoy Deyatel'nosti imeni I. P. Pavlov, Vol 23, Vyp 4, Jul/Aug 73, pp 697-703

Abstract: Conditioned reflexes requiring differentiation of simultaneous and successive complex signals, acoustic, visual and positional, were elaborated in patients with local lesions of the parietal lobes, and compared to identical reflexes previously elaborated in patients with extraparietal lesions of the brain. The experimental subjects had more difficulty in differentiating both successive and simultaneous stimuli, in that more repetitions were required to establish the reflex, and in some cases it could not be forced. Signals of differing modes were more easily distinguished than those of one mode. Successive analysis was more affected than

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KAYDANOVA, S. I., et al., Zhurnal Vysshey Nervnoy Deyatel'nosti imeni I. P. Pavlov, Vol 23, Vyp 4, Jul/Aug 73, pp 697-703

simultaneous, especially for acoustic signals. Auditory stimuli were less effective than visual for successive analysis, while the reverse was true for simultaneous analysis. Lesions of the left parietal lobe resulted in more severe disturbances of both kinds of analysis, which was said to reflect the significance of speech in the analysis of complex signals. However lesions of the right lobe affected predominantly visual analysis, which is said to suggest that the analysis of visual non-speech signals is achieved predominantly by the right hemisphere. Those patients who showed the greatest disturbance of higher cortical functions also showed the most disturbed analysis. These results are also considered to show that the analysis of complex signals resides in the parietal region.

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USSR

UDC 622.011.43

KAYDAROV, K. K., KANAZIN, S. K., ~~KAYDAROV, K. K.~~

"On the Action of a Stratified Force on the Boundary of an Inclined Stratified Massif"

Alma-Ata, Izvestiya Akademii Nauk Kazakhskoy SSR, Seriya Fiziko-matematicheskaya, No. 5, Sep/Oct 71, pp 50-53

Abstract: The effect of a concentrated force applied at the boundary of a half-space on the stress state of two models of an elastic massif is investigated and a solution to the problem is given. The two models of a finely stratified massif used to study the effect of the magnitude of the angle of incidence of rock on the stress and deformation state of structures are: (1) the massif is considered as a continuous homogeneous transversally isotropic body with an inclined plane of isotropy and (2) the other model represents it as an isotropic stratified body characterized by noncontinuity of layer adhesion. The elasticity theory of an anisotropic body proposed by S. G. Lekhnitskiy is used as the basis of the solution. Isocurves of the stresses are given as a function of the angle of the inclined plane of isotropy of the continuous transversally isotropic massif and of a massif with a discontinuous layer adhesion. It is shown that the distances between gaps in the stress isolines tend toward Boussinesq circles.

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UDC 622.011.43

USSR

KAYDAROV, K. K., KANAZIN, S. K., KAYDAROV, K. K.

"On the Action of a Stratified Force on the Boundary of an Inclined Stratified Massif"

Alma-Ata, Izvestiya Akademii Nauk Kazakhskoy SSR, Seriya Fiziko-matematicheskaya, No. 5, Sep/Oct 71, pp 50-53

Abstract: The effect of a concentrated force applied at the boundary of a half-space on the stress state of two models of an elastic massif is investigated and a solution to the problem is given. The two models of a finely stratified massif used to study the effect of the magnitude of the angle of incidence of rock on the stress and deformation state of structures are: (1) the massif is considered as a continuous homogeneous transversally isotropic body with an inclined plane of isotropy and (2) the other model represents it as an isotropic stratified body characterized by noncontinuity of layer adhesion. The elasticity theory of an anisotropic body proposed by S. G. Lekhnitskiy is used as the basis of the solution. Isocurves of the stresses are given as a function of the angle of the inclined plane of isotropy of the continuous transversally isotropic massif and of a massif with a discontinuous layer adhesion. It is shown that the distances between gaps in the stress isolines tend toward Boussinesq circles.

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USSR

UDC 621.371:551.510.52

STOTSKIY, A. A., KAYDANOVSKIY, M. N., and MAGAMADOVA, T. A.

"Structural Functions of Phase Fluctuations in Radio Waves Propagated in Atmospheric Layers Near the Ground"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl. Sekts. 2 (Tenth All-Union Conference on the Propagation of Radio Waves; Report Theses; Section 2--collection of works) "Nauka," 1972 pp 56-60 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10A356)

Translation: Results are given of an experimental determination of the difference in electrical range distances and the computation of the time structure functions of the fluctuation in this quantity. It is established that in propagating waves along paths near the ground, the index for the degree of the structural function is 0.6-0.9, which is quite different from the "5/3" law typical of the free atmosphere. Three illustrations, bibliography of five. A. L.

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USSR

UDC 632.4:582.285.22:633.11

SANIN, S. S., and KAYDASH, A. S., North Caucasian Scientific Research
Institute of Phytopathology, Krasnodar

"The Effects of Light on the Infectious Process of the Agent of Wheat Stem
Rust"

Leningrad, Mikologiya i Fitopatologiya, Vol 7, No 5, 1973, pp 433-437

Abstract: The effects of light waves on the infectious process of *Puccinia graminis f. sp. tritici* uredospores were evaluated at 24.3-26.5° on wheat strain Kubanka-3. The results showed that formation of infectious structures were enhanced by infrared and red-orange part of the spectrum, and inhibited by ultraviolet and blue-violet wavelengths. The minimal light intensity required to show enhancement was three thousand lux; at 3.5 thousand lux the incidence of disease was increased 1.7 to 4.6-fold.

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USSR

UDC 582.285.22:581.14:633.11

SHINKAREV, V. P., and KAYDASH, A. S., North Caucasian Scientific Research
Institute of Phytopathology, Krasnodar

"The Characteristics of Penetration and Development of the Yellow Wheat Rust
Pathogen in Host Tissues"

Leningrad, Mikologiya i Fitopatologiya, Vol 7, No 5, 1973, pp 428-433

Abstract: Microscopic studies were conducted on the germination of *Puccinia glumarum* uredospores, and the penetration of this agent of wheat yellow rust into the host tissues. It has been determined on histological grounds that the germinating buds of the uredospores enter the tissues through both the ostial openings and through epidermal cells. Under the conditions of this study appressors were not seen, nor was there evidence of substomial vesicles. However, selectivity was evident in the fact that not every ostial opening seems susceptible to penetration. Once the growth tubules have entered the cells infectious hyphae develop, spread beneath the epidermis, branch, and enter mesophilic cells. Occasionally, hyphae from two separate spores may fuse. Eventually the hyphae intimately surround each mesophilic cell.

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USSR

UDC 621.791.6

KAYDASH, N. G., CHASTOKOLENKO, P. P., TKACHENKO, P. A., TATARCHUK, V. S.,
TUCHKO, M. V., LUTSENKO, L. I., Uman Pedagogical Institute

"Diffusion Titanation of Type 45 Steel"

Moscow, Zashchita Metallov, No 4, 1972, pp 508-509

Abstract: One promising method for increasing the heat resistance of steels is diffusion saturation of their surface with metals, particularly titanium. The authors studied the structure, composition, and certain properties of diffusion layers formed on type 45 steel upon saturation of the surface with titanium. This process forms dense coatings, firmly bonded to the base metal. Metallographic analysis has shown that the titanium coatings have a columnar structure. Their microhardness on the surface of the specimen is 330 kg/mm², decreasing linearly to 200 kg/mm² at 340 μ from the surface due to decreasing titanium concentration. The titanium coatings on type 45 steel consist of a phase with a body-centered cubic lattice with parameters $a=2.8991$ A on the surface of the specimen. The $a=2.8768$ A line of iron was also discovered in the same zone. At 900°C and less, the titanium-treated steel had heat resistance equal to type 1KH18N9T chrome-nickel steel, but was oxidized more strongly at 980°C.

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1/2 018 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--A DIGITAL MEASURING SYSTEM FOR AUTOMATIC INTERFEROMETRES -U-
AUTHOR--(05)-GRAPKIN, M.YA., ZORIN, D.I., KAYEKIN, V.V., SVERDLICHENKO,
V.D., SHESTOPALOV, YU.N.
CCOUNTRY OF INFO--USSR
SOURCE--MOSCCW, IZMERITEL'NAYA TEKHNIKA, NO 2, 1970, PP 35-37
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--DIGITAL SYSTEM, INTERFEROMETER
CCNTRCL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FAME--1994/1463 STEP NO--UR/0115/70/000/002/0035/0037
CIRC ACCESSION NO--AP0115393
UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0115393

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DIGITAL MEASURING SYSTEM (DMS) IS INTENDED FOR CHECKING HATCHED MEASURES OF LENGTH UNDER DYNAMIC CONDITIONS. THE ESSENCE OF THE METHOD OF MEASUREMENTS OF THE LENGTH OF THE SUBDIVISIONS OF HATCHED MEASURES CONSISTS IN THE FACT THAT REGISTRATION OF THE ORDER OF INTERFERENCE AND FIXATION OF THE MEASUREMENT RESULTS (AT THE MOMENT THAT THE CENTER OF THE HATCH PASSES UNDER THE AXIS OF THE SLIT OF A PHOTOELECTRIC MICROSCOPE) TAKES PLACE DURING A CONSTANT CHANGE OF THE OPTICAL DIFFERENCE OF THE COURSE OF RAYS IN THE INTERFEROMETER. IN ACCORDANCE WITH THIS, THE FUNCTIONAL LAYOUT OF THE DMS CONSISTS OF A PHOTOELECTRIC DEVICE FOR MEASURING THE ORDER OF INTERFERENCE AND A DEVICE FOR REGISTERING THE MOMENT THAT THE CENTER OF THE HATCH PASSES UNDER THE AXIS OF THE SLIT OF THE PHOTOELECTRIC MICROSCOPE FOR OUTPUT OF THE SIGNAL OF RECORDING OF THE MEASUREMENT RESULT. THE BASIC METROLOGICAL AND TECHNICAL PARAMETERS OF THE DMS ARE PRESENTED.

UNCLASSIFIED

1/2 010 UNCLASSIFIED PROCESSING DATE--2306170
TITLE--DYNAMICS OF REMOVAL OF DIETHYLTOLUAMIDE FROM TREATED SKIN -U-

AUTHOR--(03)-MARKINA, V.V., DREMOVA, V.P., KAE MNNOV, N.A.

COUNTRY OF INFO--USSR

SOURCE--MASLO ZHIR. PROM. 1970, 36(2), 30-2

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--INSECT REPELLENT, BENZENE DERIVATIVE, AMIDE, SKIN TEST,
CELLULOSE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1997/0698

STEP NO--UR/9085/70/036/002/0030/0032

CIRC ACCESSION NO--AP0119605

UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--23OCT7C

CIRC ACCESSION NO--AP0119609

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EVAPN. OF DIETHYLTOLUAMIDE (I), USED AS AN INSECT REPELLENT, FROM SKIN TREATED WITH COSMETIC PREPNS. CONTG. I WAS EXAMD. THE ADDN. OF FILM FORMING AGENTS OR STABILIZERS, E.G., HYDROXYPROPYL CELLULOSE, SILICONE FLUID (II), AND ET CELLULOSE (III) INCREASED THE RESIDENCE TIME OF I ON THE SKIN. THE BEST RESULTS WERE OBTAINED WITH EMULSION CREAMS CONTG. 20PERCENT I AND II AS FILM FORMING AGENT AND WITH SOAP CREAMS WITH 40PERCENT I AND III AS STABILIZER (25PERCENT I EVAPD. AFTER 6 HR). PHYS. ACTIVITY OF THE INVESTIGATED SUBJECTS INCREASED THE RATE OF I EVAPN. FROM SKIN. GNATS WERE REPELLED WITH A MIN. CONCN. OF 0.14 MG I-1 CM PRIME2 OF SKIN, WHILE FOR MIDGES THE MIN. CONCN. WAS 1.5 MG. FACILITY: MOSK. MYL'NO KOSMET. FABR. SVOBODA. MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 681.333

SULIMA, L. A., BONDAREV, V. B., MIROLYUBSKIY, V. M., REDCHENKO, V. I.,
KAYETKIN, R. A.

"A Device for Modeling a Neuron"

Moscow, Otkrytiya, Izobretneiia, Promyshlennyye Obraztsy, Tovarnyye Znaki,
No 48, Dec 73, Author's Certificate No 409245, Division G, filed 24 Apr 72,
published 30 Nov 73, p 121

Translation: This Author's Certificate introduces a device for modeling a neuron. The device contains a power supply and integrators. As a distinguishing feature of the patent, the device is simplified by adding a balanced differential amplifier covered by negative and positive feedback loops. Connected to the first input of the amplifier are integrators and a scaling resistor unit, and also switching elements whose controlling inputs are connected to the power supply. The first output of the balanced differential amplifier is connected to the output of the first switching element, while the second output of the balanced differential amplifier is connected to the output of the second switching element, which is connected in turn to the first switching element, to the zero potential line, and to the second input of the balanced differential amplifier.

1/1

- 55 -

USSR

UDC: 621.396.622

SHER, V. B., KAYEVSKIY, Z. M., MAKAROV, G. V.

"A Synchrophase Video Pulse Frequency Multiplier Based on Semiconductor Devices"

V sb. Poluprovodn. pribory v tekhn. elektrosvyazi (Semiconductor Devices in Electrical Communications Technology--collection of works), vyp. 7, Moscow, "Svyaz'", 1971, pp 107-112 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6D68)

Translation: Devices are described for frequency multiplication and division of video pulses, keeping input and output signals in phase. Two illustrations, bibliography of one title. Resumé.

1/1

" 9 "

USSR

UDC 543.423:621.385

ANDREYEV, Yu. P., IONOVA, L. S., and KAYGORODOV, V. A.

"Investigating Deposits on Electrodes and Envelopes of Pulse Tubes"

Minsk, Zhurnal Prikladnoy Spektroskopii, Vol 13, No 2, Aug 70, pp 204-207

Abstract: The object of this paper is to investigate the chemical composition of the deposits formed on electrodes and envelopes in gas-discharge tubes. The investigation consisted in the spectral analysis of the tube's composition and a comparison of the results obtained with the spectra produced by burning the deposits formed on the tube components. The samples studied were placed in a graphite cup in which a vacuum of 0.1 mm Hg was maintained. By passing a current of 200-300 a the cup was heated to 1000-2000 C. As a result of heating, the highly volatile admixture from the base metal was evaporated and deposited on the graphite electrode positioned above the cup with the sample. The burning of the deposited material made it possible to determine its chemical composition. The results obtained show that the chemical composition of the deposits is independent of the shape of the tube envelope and the discharge power. W, Si, Ni, and Ba were the principal elements deposited on the cathode and adjacent area; and Mo, W, and Si, on the anode and adjacent area.

1/1

1/2 026
UNCLASSIFIED
PROCESSING DATE--30OCT70
TITLE--USE OF SURFACE ACTIVE AGENTS FOR DRYING THE EXTERIOR FACINGS IN GAS
STORAGE WELLS --U--
AUTHOR--(04)--KARIMOV, M.F., KAYGORODOV, V.A., KVASOV, V.P., PARFENOV, V.I.
COUNTRY OF INFO--USSR
SOURCE--GAZOV. PROM. 1970, 15(3), 23-4
DATE PUBLISHED--70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--SURFACE ACTIVE AGENT, SURFACE TENSION, NATURAL GAS, POL
STORAGE, UNDERGROUND FACILITY, CHEMICAL DRYING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/2092

STEP NO--UR/0492/70/015/003/0023/0024

CIRC ACCESSION NO--AP0127465

UNCLASSIFIED

UDO 621.382:621.517.799

USSR

SAVCHENKO, I.F., KAYGORODOV, YU.YE.

"Device For Measurement Of The Relaxation Time Of Excess Charge Carriers In Semiconductor Diodes"

Elektron.tekhnika. Nauch.-tekhn.sb. Upr.kachestvom i standartiz. (Electronics Technology. Scientific-Technical Collection. Quality Control And Standardization), 1972, Issue 3, pp 95-100 (from RZh:Elektronika i yeye primeneniye, No 9, Sept 1972, Abstract No 9B462)

Translation: A device is described for measurement of the relaxation time of excess charge carriers in semiconductor diodes (p-n junctions) by the method of the phase characteristic of the transmission factor of the voltage in a circuit [tsep'] with a p-n junction, proposed and worked out by Academician E.I. Adirovich. The device makes it possible to perform measurements of τ on the order of 10^{-6} --- 10^{-10} sec with a precision not worse than plus or minus 10 per-cent. Summary.

2/2 026

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0127465

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SUITABILITY OF SURFACE ACTIVE AGENTS IS DETD. BY THEIR FOAMING CHARACTERISTICS AND ISOTHERM OF SURFACE TENSION. THEIR OPTIMUM CONC. IS DETD. BY THE MIXING COEFF., WHICH IS DETD. BY MIXING THE SOLN. WITH N.

FACILITY: UFIM. NETF. INST.,

UFA, USSR

CIA-RDP86-00513R002201230001-0"

UNCLASSIFIED

1/2 022 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--THIYLATION OF VINYL ETHERS OF AMINDETHANOLS -U-

AUTHOR--(03)-SEREBRENNIKOVA, E.V., KOMAROV, N.V., KAYGORODOVA, V.I.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(4), 828-31

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANOSILICON COMPOUND, THIOL, NITRILE, ORGANIC SYNTHESIS, UV
LIGHT, AMINE, ETHANOL, ETHER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3002/1378

STEP NO--UR/0079/70/040/004/0828/0831

CIRC ACCESSION NO--AP0128778

UNCLASSIFIED

2/2 022
CIRC ACCESSION NO--AP0128778
ABSTRACT/EXTRACT---(U) GP-0-
GRAPHIC INFORMATION.

UNCLASSIFIED

PROCESSING DATE--27NOV70

ABSTRACT. MICROFICHE OF ABSTRACT CONTAINS

UNCLASSIFIED

USSR

UDC: 6.74

DOMRACHEV, V. M., KAYGORODTSEV, G. I., TERESHKO, Ye. P.

"Methods of Checking Information in Automatic Control Systems"

V sb. Vopr. tekhn. i inform. obespecheniya ASU (Problems of Hardware and Software for Automatic Control Systems--collection of works), Novosibirsk, 1971, pp 3-12 (from RZh-Kibernetika, No 5, May 72, Abstract No 5V499)

[No abstract.]

1/1

- 45 -

UDC: 8.74

USSR

DOMRACHEV, V. M., KAYGORODTSEV, G. I.

"Evaluating the Productivity of the Computer Complex of an Automatic Control Systems With Regard to the Effect of Intermittent Failures"

V sb. Vopr. tekhn. i inform. obespecheniya ASU (Problems of Hardware and Software for Automatic Control Systems—collection of works), Novosibirsk, 1971, pp 13-16 (from RZh-Kibernetika, No 5, May 72, Abstract No 5V500)

[No abstract.]

USSR

UDC 546.718

SPITSYN, V. I., KUZINA, A. F., TSARENKO, A. F., CELOVA, A. A., BALAKHOVSKIY, O. A., KODOCHIGOV, P. N., GLAZUNOV, M. P., and KAYMIN, I. V.

"Synthesis of Metallic Technetium and its Physical Investigations"

Leningrad, Radiokhimiya, Vol 12, No 4, 1970, pp 617-621

Abstract: Highly pure metallic technetium in the form of a silver-gray powder or compact metal (regulus) was produced from tetraphenylarsonium pertechnetate $(C_6H_5)_4AsTcO_4$ by hydrogen reduction in an electric furnace. The resultant material showed superconductivity with a critical point of $8.2^\circ K$. A study of the technology for producing the metal from the initial pertechnetate showed that technetium dioxide is produced after one hour in a hydrogen atmosphere at $260^\circ C$, and the metal is produced at a temperature of $1000^\circ C$. X-ray structural analysis revealed that metallic technetium has a hexagonal lattice with dense atomic packing of the magnesium type, the lattice parameters being $a = 2.74 \pm 0.005$ and $c = 4.41 \pm 0.005$; $c/a = 1.609$. The radiometric and neutron activation methods of analysis showed extremely minute quantities of trace impurities: $Ru \sim 10^{-8}$, $Rh \sim 10^{-14}$, $Al \sim 10^{-5}$, $Na \sim 10^{-3}$ and $As \sim 10^{-3}$ gm per gm of technetium. Within the limits of sensitivity of the neutron activation method, no other impurities were detected.

1/1

USSR

UDC 621.371.332

BORODAVKO, Yu. M., TOLSTOV, V. V., KAYNARA, V. N., and GAPONOV, A. P.

"Investigating the Structure of Radio Signals Reflected from the Ionosphere on the Basis of an Analysis of the Statistical Parameters for Their Orthogonal Components"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl. Sekts. 1 (Tenth All-Union Conference on the Propagation of Radio Waves; Report Theses; Section 1--collection of works) "Nauka," 1972, pp 321-325 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10A329)

Translation: On the basis of a detailed analysis of the characteristics of a mathematical model represented by a vector with normally correlated orthogonal components, a method is proposed for investigating the structure of radio signals reflected from the ionosphere, based on the measurement of the statistical parameters of their normal coordinates. Bibliography of four. A. L.

1/1

USSR

UDC 666.76:536.421.5

KAYNARSKIY, I. S., DEGTYAREVA, E. V., and ORLOVA, I. G., Ukrainian Scientific Research Institute of Refractory Materials

"Technology for the Production of Refractory Materials From Sintering-Active Materials"

Moscow, Ogneupory, No 12, 1972, pp 41-46

Abstract: The technology for producing refractories from materials capable of active sintering (ASM) is reviewed. Active sintering materials include magnesite, chromite, alumina, chamotte, and others. These materials should be ground to particles 10 μ m in size in order to produce items of low porosity and high thermal stability. A vibrational mill is best suited for grinding ASM, with 1200 vibrations/min and capable of producing 1-1.2 tons magnesite or chromite powder per hour. Different types of presses are recommended for production of briquettes from ASM. Rotary-ring and tunnel-type furnaces are best suited for sintering of items produced from ASM. Refractory materials produced by the suggested method are characterized by low porosity, low shrinkage, a low thermal expansion coefficient, high density, good thermal stability, and high compressive strength. Numerical indicators of the above properties are presented in tables.

1/1

Refractory Materials

UDC 666.764.32.001.5

USSR

KABAKOVA, I. I., DEGTYAREVA, E. V., and KAYNARSKIY, I. S.,
Ukrainian Scientific Research Institute of Refractories

"Extra-Compact Corundum Refractories"

Moscow, Ogneupory, No 1, Jan 71, pp 30-36

Abstract: The article describes a technique which has been developed for the fabrication of extra-compact corundum products from granulated uncalcined briquette, fabricated entirely from finely pulverized uncalcined commercial alumina. The products have a porosity of less than 3 percent, good thermomechanical properties, creep strength, and resistance to reduction by carbon at high temperatures. Calcining conditions and charging methods were determined for products with a linear calcination shrinkage of up to 20 percent. It was found that corundum products can be calcined from granulated stock in a single-row charge according to an accelerated regime lasting about 45 hours, including hold-

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USSR

KABAKOVA, I. I., et al., Ogneupory, No 1, Jan 71, pp 30-36

ing and cooling, as well as in a four-row-high charge in a two-stage process at 1300 and 1750° C. An experimental batch of checker-type products was produced, with none of the products displaying deformation despite shrinkage reaching 19.8-21.2 percent (linear).

2/2

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1/3 016 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--EFFECT SOME TECHNOLOGICAL PARAMETERS ON THE PROPERTIES OF CORUNDUM
REFRACTORIES -U-
AUTHOR--(03)-KAYNARSKIY, I.S., DEGTVAREVA, E.V., KABAKOVA, I.I.
COUNTRY OF INFO--USSR
SOURCE--OGNEUPORY 1970, 35(2), 46-54
DATE PUBLISHED-----70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--REFRACTORY MATERIAL, BLAST FURNACE, GRAIN SIZE, CORUNDUM
REFRACTORY, TITANIUM OXIDE, POROSITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1996/1805

STEP NO--UR/0131/70/035/002/0046/0054

CIRC ACCESSION NO--AP0118772

UNCLASSIFIED

2/3 016

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0118772

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF THE FOLLOWING FACTORS WAS STUDIED: (1) TEMP. OF FIRING OF THE RAW GROG; (2) ADDN. OF TIO SUB2 TO THE MIXT.; (3) GRAIN COMPN. OF THE GROG, (4) THE RATIO GRAINY GROG: POWD. GROG (AS BINDER) ON THE D., STRENGTH, AND CREEP OF SINTERED CORUNDUM REFRACTORIES. BY DECREASING THE FIRING TEMP. OF THE RAW GROG FROM 1700 TO 1300DEGREES ITS POROSITY INCREASES, BUT THE POROSITY OF PRODUCTS, PREPD. FROM THE GROG, INCREASES. THE EFFECT OF THE GRAIN COMPN. IS RELATED WITH THE D. OF PACKAGING OF THE GRAINS. BEST RESULTS ARE OBTAINED WITH A MIXT. OF 45-65PERCENT COARSE GRAINS, IS SMALLER THAN 10PERCENT GRAINS OF MEDIUM SIZE, AND THE REST BINDER, CONSISTING OF FINE GROG POWDER. VARIATION OF THE SIZE OF THE COARSE GRAINS HAS LESS EFFECT THAN A VARIATION OF THE AMT. OF BINDER. DECREASE OF THE ANNEALING TEMP. OF THE RAW GROG LEADS TO AN INCREASE OF SHRINKAGE. THE SUBSTITUTION OF BURNED GROG BY UNBURNED GROG AS BINDER DOES NOT GIVE SATISFACTORY RESULTS, AND LEADS TO A DECREASE OF THE LIMIT OF SOLIDITY UNDER LOAD. ADDN. OF 0.5PERCENT TIO SUB2 DECREASES THE POROSITY AND INCREASES THE APPARENT D. OF GROG, OBTAINED BY FIRING AT 1300-1500DEGREES, BUT ITS D. IS SMALLER THAN THAT OF GROG WITHOUT TIO SUB2, BUT FIRED AT 1750DEGREES. ADDN. OF TIO SUB2 DECREASES THE COMPRESSIVE STRENGTH BY INCREASE OF THE CORUNDUM CRYSTALS. ADDN. OF TIO SUB2 ALSO DECREASES THE SHRINKAGE DURING SINTERING, AND AT THE SAME TIME DIMINISHES THE STRENGTH OF THE SINTERED OBJECTS. VARIATION OF THE FIRING TEMP. OF THE RAW GROG FROM 1300 TO 1750DEGREES DOES NOT EFFECT THE CREEP OF THE OBJECTS, SINTERED THEREFROM AT 1700DEGREES FOR 8 HR.

UNCLASSIFIED

3/3 016

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0118772

ABSTRACT/EXTRACT--SMALL TIO SUB2 ADDNS. DECREASE THE CREEP OF
REFRACTORIES, PREPD. FROM GROG, FIRED AT 1300-1500DEGREES, AS A
CONSEQUENCE OF A MORE INTENSIVE RECRYSTN. A DECREASE OF THE FIRED TEMP.
OF CORUNDUM OBJECTS INCREASES THEIR CREEP. FORMULATIONS ARE GIVEN FOR
THE PREPN. OF OBJECTS WITH SMALLER THAN 2, 2.1-5, 5.1-9, 81.-12,
12.1-18, AND GREATER THAN 18PERCENT POROSITY. THE SINTERED CORUNDUM
REFRACTORIES CAN BE USED IN AIR HEATED BLAST FURNACES. FACILITY:
UKR. NAUCH.-ISSLED. INST. OGNEUPOR., KHARKOV, USSR.

UNCLASSIFIED

1/2 030 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--CORUNDUM REFRACTORIES -U-
AUTHOR--(03)-KAYNARSKIY, I.S., DEGTYAREVA, E.V., KABAKOVA, I.I.
COUNTRY OF INFO--USSR
SOURCE--OGNEUPORY 1970, 35(4), 46-53
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--CORUNDUM REFRACTORY, COMPRESSIVE STRENGTH, GRAIN STRUCTURE,
THERMAL CONTRACTION, THERMAL CONTRACTION, THERMAL STABILITY, CARBON,
ANNEALING, REFRACTORY PRODUCT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3006/0629 STEP NO--UR/0131/70/035/004/0046/0053
CIRC ACCESSION NO--AP0134391

UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0134391

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS IS ESSENTIALLY A REVIEW WORK PLUS NEW DATA AND RECOMMENDATIONS CONCERNING A NO. OF ASPECTS OF CORUNDUM REFRACTORIES. AMONG THE ITEMS COVERED ARE THE FOLLOWING: DEPENDENCE OF THE AL SUB2 O SUB3 CONTENT IN THE ARTICLES ON THE ADDN. OF TECH. GRADE ALUMINA TO NATURAL RAW MATERIAL CONTG. 35, 40, AND 45PERCENT AL SUB2 O SUB3; COMPRESSION STRENGTH OF CORUNDUM PRODUCTS; CHANGE IN THE GRAIN COMPN. OF BALL BRIQUET MADE OF FINE GROUND ALUMINA AFTER FIRING IN A LAB. ROTARY FURNACE AT VARIOUS TEMPS.; DEPENDENCE OF THE SHRINKAGE OF SUCH A BRIQUET ON THE FINAL FIRING TEMP. AT VARIOUS HOLDING TIMES; SHRINKAGE DURING 2-STAGE ANNEALING (1300 AND 1750DEGREES) OF SPECIFIC DENSE CORUNDUM ARTICLES MADE OF GRANULATED BODIES; TABULATION OF PROPERTIES AND CHARACTERISTICS OF CORUNDUM CERAMICS; DEPENDENCE OF HEAT COND. COEFFS. OF CORUNDUM REFRACTORIES ON THEIR AV. HEATING TEMP. AND THE POROSITY; THERMOMECH. PROPERTIES OF CORUNDUM REFRACTORIES; AND THERMOPHYS. PROPERTIES AND STABILITY TO C OF CORUNDUM REFRACTORIES. FACILITY: UKR. NAUCH.-ISSLED. INST. OGNEUPOROV, KHARKOV, USSR.

UNCLASSIFIED

AA0044641

KAYNOV Ye. S. UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

2/70

238214 QUALITY CHECK RIG FOR ADHESIVE JOINTS has a rotating brush cylinder with a thin line of bristles arranged as a spiral with a pitch equal to the length of the cylinder. The sandwich strip to be tested is pulled by rollers under the brush. A defective bond leads to a sharp rise of the sonic vibrations in the 8 kHz range. This is picked up by a microphone with filters and cathode followers, amplified and operates an electromagnetic marker for the defective spot.

1.8.67 as 1176930/29-33.A.A.PIZHURIN et al.MOSCOW
TIMBER INST. (3.7.69) Bul 9/20.2.69. Class 42k.
Int.Cl.G 01 n.

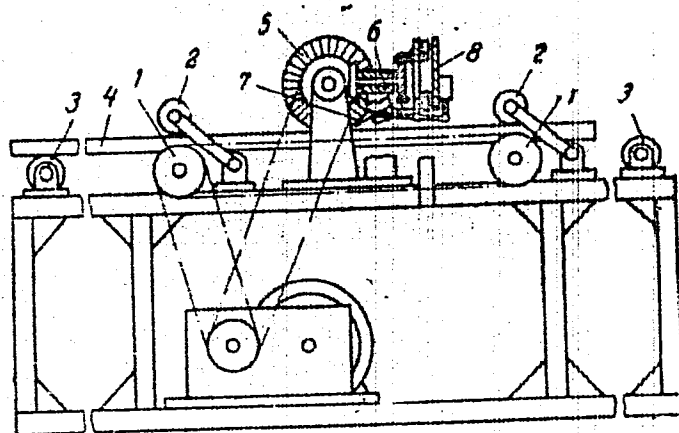
AUTHOR: Pizhurin, A. A.; Polishchuk, A. N.; Kaynov, Ye. S.;
Moskovskiy Lesotekhnicheskii Institut

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UDC 621.375.82

USSR

AKERMAN, D., YELISEYEV, P. G., KAYPER, A., MAN'KO, M. A., RAAB, Z.

"Methods for Selection of Types of Oscillations in Injection Semiconductor Lasers"

V sb. Kvant. elektronika (Quantum Electronics -- Collection of Works), No. 1, Moscow, 1971, pp 85-90 (from RZh-Fizika, No 7, Jul 71, Abstract No 7D1115)

Translation: To improve the spectral composition of radiation of an injection semiconductor laser, particularly to raise the yield power in a mode of a single type of oscillations, external elements having spectral selectivity were introduced into the resonator of the semiconductor laser. The following versions were studied experimentally: (a) a compound resonator; (b) a resonator with an interference filter; (c) two optically connected Fabry-Perot-type resonators of different lengths. The effect of the external selective element on the radiation spectrum of the laser was observed in all cases, and generation in one longitudinal type of oscillations was achieved for an essentially greater excess of the threshold than in ordinary injection semiconductor lasers. The output power in a single-frequency mode was up to 0.5 w (in the case of a composite resonator). Possibilities of detuning the wavelength of the laser with the aid of external elements was studied within the range of the amplification band of the semiconductor. 15 ref. Authors abstract.

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USSR

UDC: 621.373:530.145.6

AKERMAN, D., YELISEYEV, P. G., KAYPER, A., MAN'KO, M. A., RAAB, Z.

"Methods of Mode Selection in Injection Semiconductor Masers"

V sb. Kvant. elektronika (Quantum Electronics--collection of works), No 1, Moscow, 1971, pp 85-90 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5D173)

Translation: In order to improve the spectral composition of emission from an injection semiconductor maser, especially to increase the output power in one wave mode, external elements having spectral selectivity were introduced into the maser cavity. The following modifications were experimentally studied: a) a composite cavity; b) a cavity with an interference filter; c) two optically coupled cavities of the Fabry-Perot type with different lengths. The effect of the external selective element in the maser emission spectrum is observed in all cases, and emission on a single longitudinal wave mode is achieved at an appreciably higher excess over the threshold than in conventional semiconductor injection masers. The output power in the single-frequency mode is as high as 0.5 W (in the case of a composite cavity). An investigation is made of the possibilities for tuning the maser wavelength by means of external elements within the range of the amplification band of the semiconductor. Five illustrations, bibliography of fifteen titles.

1/1

1/2 027 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--RADIATION OPTICAL PHENOMENA IN CALCIUM FLUORIDE, RARE, EARTH
FLUORIDE CRYSTALS -U-
AUTHOR--(03)-VAKHIDOV, SH.A., KAYPOV, B., TAVSHUNSKIY, G.A.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK UZB. SSR, SER. FIZ., MAT. NAUK 1970, 14(2), 73-7
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, PHYSICS
TOPIC TAGS--RARE EARTH COMPOUND, FLUORIDE, CRYSTAL, GAMMA LUMINESCENCE,
EUROPIUM COMPOUND, HOLMIUM COMPOUND, CALCIUM COMPOUND, OPTIC PROPERTY,
VISIBLE LIGHT RADIATION, COBALT ISOTOPE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/1614 STEP NO--UR/0166/70/014/002/0073/0077
CIRC ACCESSION NO--AP0125236
UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0125236

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE GAMMA,LUMINESCENCE OF CAF SUB2
ERF SUB3 AND CAF SUB2, HOF SUB3, EXCITED BY PRIME60 CO, WAS INVESTIGATED
AT 77-480DEGREESK. AT LOW TEMPS., THE LUMINESCENCE INCREASES WITH
INCREASING ACTIVATOR CONCEN., DECREASING WITH HIGHER CONCNS. AT HIGH
TEMPS. THE GAMMA,LUMINESCENCE IS ASCRIBED BASICALLY TO ER
PRIME3POSITIVE AND HO PRIME3POSITIVE IONS, WHICH HAVE NO LOCAL CHARGE
COMPENSATORS. THE MECHANISM IS CONFIRMED BY EXPTL. DATA ON THE
GAMMA,LUMINESCENCE OF CAF SUB2NEGATIVE EUF SUB3. FACILITY:
INST. YAD. FIZ., TASHKENT, USSR.

UNCLASSIFIED

1/2 .028
TITLE--TIGHTNESS OF PLUGGING MATERIALS AND OF THEIR CONTACT WITH WELL
CASING SURFACES -U-
AUTHOR--(05)--SEIDRZA, M.K., SHERSTNEV, N.M., AGAYEV, M.KH., MUGALINSKAYA,
V.V., KHAYROV, KH.KH.
COUNTRY OF INFO--USSR
SOURCE--AZERB. NEFT. KHOZ. 1970, (2), 20-3
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, METHODS AND EQUIPMENT
TOPIC TAGS--PIPELINE TRANSPORTATION SYSTEM, TEST INSTRUMENTATION, NATURAL
GAS, SEAL, THERMOPLASTIC MATERIAL, HARDNESS/(U)TSKGS THERMOPLASTIC
MATERIAL

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UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--23OCT70

272 028

CIRC ACCESSION NO--AP0122257

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. AN APP. WAS DEVELOPED FOR TESTING THE TAMPING COMPN. USED IN SEALING THE GAP BETWEEN THE STANDPIPE OF A GAS WELL AND THE SIDES OF THE BORE HOLE. IT IS A BOMB IN WHICH THE TAMPING MATERIAL IS PACKED UNDER PRESSURE AROUND A CENTRAL CORE MADE OF COMPACTED SOIL TOPPED BY A METAL PIPE. A SYSTEM OF VENTS PERMITS TESTING OF THE PERMEABILITY OF SOIL TAMPERING MATERIAL SYSTEM AT THE TAMPING MATERIAL PIPE BOUNDARY UNDER 2-15 KG,CM PRIME2 AIR PRESSURE. THE BEST RESULTS WERE OBTAINED WHEN THE EXPANDING CEMENT TOPPED BY A RING SEAL OF THERMPOLASTIC RESIN TSKGS SUB75-90DEGREES AROUND THE PIPE WAS USED. THIS COMPN. AFTER HARDENING FOR 15 DAYS BECAME IMPERMEABLE TO THE AIR AT 15 KG,CM PRIME2 PRESSURE.

UNCLASSIFIED

KAYRYALIS, A.

Prosecutor
LISSE

GREATER ATTENTION TO BE PAID TO PREVENTION OF CRIME

Article by A. Kayryalis, Prosecutor of the Lithuanian SSR, Vilnius, Sovetskaya Litva, Russian, 21 February 1972, p. 2.

Achievement of strict observance by everyone of legality, the gradual overcoming of violations of the rule of law, liquidation of crime, all these constitute a difficult and complex problem, requiring for its solution not only efforts on the part of government bodies and social organizations, but efforts of toilers themselves. Liquidation of crime and of violations of the rule of law is intimately connected with the development of the country's economy, with the material security of the toilers of the city and the rural regions and with a rise of the cultural level and consciousness of the people.

The attaining of effective prevention of various kinds of violations is possible only in the climate of awareness of the emerging situations and rayon, city, a given collective or organization. It one knows the persons susceptible to criminality and other violations of legality, in those where such work is carried on skillfully and consistently, the desired results are always attained. However, to our deep regret, in a number of cases, administrative bodies and social organizations, having lost sight of preventive work, react to crime and violations of legality only after they were perpetrated.

What, then, has the analysis of crime shown over a number of years?

As a whole, far less crime has been recorded over the past two years than ever before. The number of grave and flagrant crimes has decreased sharply in 1971. As for the capture of persons taking part in violations of various norms of socialist legality, their number has increased somewhat.

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JPRS 805001
7 APR 72

Alkaloids

USSR

UDC 547.94

ARUTYUNYAN, L. S., KAYTANDZHIAN, M. A., MNATSAKANYAN, V. A., and MNDZHOYAN, A. L., Institute of Fine Organic Chemistry, Acad. Sc., Armenian SSR

"Modification of Alkaloid Structures. III. Some N-Alkoxybenzyl-(benzoyl)-anabazines"

Yerevan, Armyanskiy Khimicheskiy Zhurnal, Vol 23, No 10, 1970, pp 923-927

Abstract: While studying the structure-activity relationships, a series of N-alkoxybenzoylanabazines (I) and N-alkoxybenzylanabazines (II) were synthesized. To obtain (I), anabazine was dissolved in benzene and a benzene solution of the respective acyl chloride was added to it, followed by a 10% KOH solution and another portion of acyl chloride in benzene. The mixture was refluxed 6 hrs with stirring, cooled and mixed with 2% acetic acid. The benzene layer was separated, washed with 2% acetic acid solution, water, and 5% NaOH, dried and benzene was evaporated to yield (I). To obtain the amines (II), (I) was dissolved in ether and reduced with LiAlH_4 . Most of the above products are dense oils. Physical properties are tabulated for individual compounds.

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USSR

UDC 611-018.5:599.323.4
(282.6+282.255.1)

KAYTBEKOV, K., Complex Institute of Natural Sciences, Karakalpak Affiliate,
Uzbek Academy of Sciences

"Seasonal Changes in Some Hematologic Indexes of the Gerbil *Meriones
tamariscinus* Pall. in the Amu-Dar'ya Delta"

Moscow, Biologicheskiye Nauki, No 7, 1971, pp 51-53

Abstract: The blood morphology of *M. tamariscinus*, an important epizootiological factor in the Amu-Dar'ya delta, undergoes seasonal changes. The hemoglobin concentration, RBC and WBC counts are highest in the spring and fall and lowest in the winter both in animals weighing over 100 g (adults) and in those weighing under 100 g. The number of leukocytes peaks in the spring in the heavier animals and in the fall in the lighter ones. The decrease in formed blood elements during the cold weather is ascribed to the fact that living conditions are more difficult for the rodents at this time. The increase in blood elements in the spring and summer may be due to an intensification of metabolism activity during the warm weather.

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USSR

KAYTMAZOV, S. D., MEDVEDEV, A. A., and PROKHOROV, A. M., Physics Institute
Imeni P. N. Lebedev, USSR Academy of Sciences

"The Effect of a Magnetic Field at 400 kOe on the Plasma of a Laser Spark"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 14,
No 5, 5 Sep 71, pp 314-316

Abstract: The possibility that a magnetic field has an active influence on the geometry of a laser spark is due, in the authors' opinion, to the necessity of simultaneously satisfying two conditions: the magnetic pressure must be greater than the gas-kinetic pressure of the plasma, and, consequently, the relationship between field and temperature of the plasma is determined by the condition $T < R^2/8 \pi n k$. In order to eliminate any significant diffusion of the plasma into the field, the skin-layer must not exceed the radius of the spark (r). This leads to the relationship $T > 6.3 \cdot 10^8 r^{2/3} r^{-4/3}$ (where r is the time constant of the spark), since the skin layer $d = c \sqrt{r/2 \pi \lambda}$, and the electrical conductivity of the plasma $\lambda = 10^7 T^{3/2}/z$. Unless the first condition is satisfied, the plasma is dispersed, squeezing out the magnetic field; if the second condition is not satisfied, it diffuses into the field.

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USSR

KAYTMAZOV, S. D., et al., Pis ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 14, No 5, 5 Sep 71, pp 314-316

Thus, for the magnetic field to have any significant effect on the geometry of the spark it must be so high that, with lowering of the pressure of the plasma to the level of the magnetic pressure, its temperature is sufficiently high that no plasma diffuses into the field. This leads to the conclusion that a threshold value of the magnetic field must exist, beginning from which the field actively influences the separation of the spark. This results in finding a value of 300 kOe for the threshold value of the magnetic field. Bearing this in mind, the authors investigated a laser sample in fields of 400 kOe and built special equipment to carry out the investigation. The significant influence which the magnetic field exerts on the geometry of the spark in these investigations permits the authors to independently evaluate the lower boundary of the plasma temperature. The characteristic parameters of the spark are $r = 0.1$ cm, $\tau = 3 \cdot 10^{-7}$ sec, whence it follows that the plasma temperature is more than $6 \cdot 10^5$ oK. The article contains 2 illustrations and 5 bibliographic entries.

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K
USSR

UDC 621.373:530.145.6

VOLEK, T. B., KAYTMAZOV, S. D., MEDVEDEV, A. A., POGORELSKIY, I. V.

"Obtaining Single Picosecond Pulses in a Laser with a Thin Translucent Laser"

Kratk. soobshcheniya po fiz. (Brief Reports on Physics), 1970, No 4, pp 15-19
(from RZh-Radiotekhnika, No 8, Aug 70, Abstract No 8 D185)

Translation: This article contains descriptions of experiments in generating single picosecond pulses by a neodymium glass laser. It is demonstrated that in obtaining such pulses, wedge-shape mirrors, a container located at the Brewster angle, the pumping level close to threshold and corresponding choice of type and concentration of phototropic dye are necessary. Pulses 1 picosecond long are obtained both with thick and thin containers. Replacement of a thick container by a thin one increases the probability of obtaining pulses from 30 to 45%. Use of a reflecting container increases the stability of operation of the laser.

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USSR

UDC: 911.3.616.981.42(47+57)

ASLANYAN, R. G., KAYTMAZOVA, D. S., KURDINA, D. S., ZABRODIN, V. A.

"Natural Foci of Brucellosis"

V sb. Materialy SV Vses. S'ezda epidemiologov, Mikrobiologov i infektsionistov. Tezisy dokl. Ch. I. (Proceedings of the 15th All Union Conference of Epidemiologists, Microbiologists and Specialists in Infectious Diseases, Report Theses Part I--collection of works) Moscow, 1970, pp 112-113 (from RZh-Meditsinskaya geografiya, No 1, Jan 71, Abstract No 1.36.113, by V. Maslovskaya)

Translation: Brucellosis infection has been observed in the last few years among wild animals of the USSR Far North. Instudying 1,437 wild animals and fur-gearing animals from farms (wild reindeer, polar wolf, polar fox, wolverine, muskrat, sable and others), 32 brucellosis cultures were isolated. They were all identical to cultures isolated from domesticated reindeer, i. e. of the biotype *Brucella suis*. The high incidence of brucellosis in the polar wolf (9.2%) furnishes indirect proof of the significant distribution of this infection among reindeer. Thus the presence of brucellosis infection among wild animals and murine rodents requires great epizootiological and epidemiological significance, considering the constant contact of wild reindeer with domesticated deer, and their commercial significance.

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USSR

UDC 619: 576.851.42

KAYTMAZOVA, YE. I., KURDINA, D. S., DRANOVSKAYA, YE. A., GREKOVA, N. A.,
Institute of Epidemiology and Microbiology imeni N. F. Gamaleya, and
SAKHNOVSKIY, YU. G., State Scientific Control Institute of Veterinary Prepara-
tions

"Characteristics of Brucella ovis cultures"

Moscow, Veterinariya, No 10, 1971, pp 44-46

Abstract: Comparative study of several Brucella ovis strains isolated from sick animals in the Soviet Union (Novgorod and Pskov oblasts) showed that they are identical in morphological and biological properties to cultures isolated in Australia, New Zealand, Argentina, and Bulgaria. All strains were similar in differential properties (high carbon dioxide requirement for growth, resistance to brucellosis Tb phage, oxidative metabolism) to Brucella melitensis. Infection of guinea pigs with these strains showed that they are low in virulence (only a dose of $2 \cdot 10^9$ microbial cells induced disease). Histological examination revealed intensified lymphopoiesis and hyperplasia of reticular cells in the lymph nodes and spleen and the appearance of lymphoid nodules in the lungs. All the strains studied attacked the testes, impairing spermatogenesis.

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USSR

UDC 536.53

KAYUKOV, YU. A.

"Standardization of Semiconductor Thermoresistor Sensing Elements of Thermometers and Thermoanemometers"

Sb. tr. Proyehtn. i n.-i. in-t. Ural'skiy Promstroyniiproyeht (Collection of Works of the Design and Scientific Research Institute. Ural Promstroyniiproyeht), 1970, No 25, pp 43-53 (from RZh-Metrologiya i Izmeritel'naya Tekhnika, No 8, Aug 70, Abstract No 8.32.586)

Translation: The question of standardization of semiconductor thermoresistors during mass production of thermometers and thermoanemometers is considered. The experimental data is presented of the comparison of temperature curves with the contours of interchangeability and the method of selection of sequential and parallel resistors is noted. The question of temperature compensation during the measurement of unsteady air flow is studied. Data is presented which allows to select nominal resistance of heating and nonheating thermoresistors and to standardize them for the purpose of obtaining a satisfactory temperature compensation. 2 ill., 2 tables, 5 bibl. entries.

Resume

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1/2 020 UNCLASSIFIED PROCESSING DATE--JUNCT70
TITLE--STRUCTURE OF PRODUCTS FROM PENTENE POLYMERIZATION ON A PHOSPHORUS
CATALYST -U-
AUTHOR--(05)-KOLESNIKOVA, T.A., KOLBIN, M.A., KAYUMOV, R.L., KRASNOVA,
L.V., GRUDNIKOVA, A.F.
COUNTRY OF INFO--USSR
SOURCE--NEFTEPERERAB., NEFTEKHIM. (MOSCOW) 1970, (1), 27-8
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, MATERIALS
TOPIC TAGS--AMYLENE, POLYMERIZATION, DIMERIZATION, SYNTHETIC RUBBER,
CHEMICAL PRODUCT PRODUCTION, HYDROGENATION, GAS CHROMATOGRAPHY, HEPTANE,
OCTANE, HEXANE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1997/1766 STEP NO--UR/0318/70/000/001/0027/0028
CIRC ACCESSION NO--AP0120473
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0120473

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PREPN. OF ISOPENTENES FOR THE PRODUCTION OF SYNTHETIC RUBBER INVOLVES 2 STEPS: DIMERIZATION OF ISO AND N-C SUB5 FRACTIONS AND DEPOLYMN. TO PURE ISOPENTENES (T. A. KOLESNIKOVA, 1965). THE COMPN. OF DIMER MIXT. IS NOW DETD. THE DEHYDRATION OF ISOAMYL ALCS. OR AMUL ALCS. OVER AL SUB2 O SUB3 CATALYST AT 360DEGREES OR 365DEGREES GAVE 99-99.9PERCENT PURE 1,PENTENE, 2,PENTENE, 2,METHYL,1,BUTENE AND 2,METHYL,2,BUTENE. THE PENTENES WERE DIMERIZED AT 185DEGREES, 50 ATM, AND 1 HR PRIME NEGATIVE1 SPACE VOL. VELOCITY, VOER H SUB3 PO SUB4 ON SILICA GEL. THE PRODUCTS WERE HYDROGENATED AND ANALYZED BY GAS CHROMATOG. THE HYDROGENATED DIMERS, REGARDLESS OF THE STARTING PENTENE, CONTAINED 30-40PERCENT TRIMETHYLHEPTANES, SIMILAR TO 20PERCENT DIMETHYLOCTANES, SIMILAR TO 20PERCENT TETRAMETHYLHEXANES, AND SIMILAR TO 20PERCENT C SUB8 C SUB9, AND ISO-C SUB10 HYDROCARBONS.

UNCLASSIFIED

Nitrogen Compounds

USSR

UDC 547.757.541.69

KAYUMOV, V., SMUSHKEVICH, Yu. I., and SUVOROV, N. N., Moscow Chemico-Technological Institute imeni D. I. Mendeleyev, Moscow

"Derivatives of Indole. LXXXIV. Hydroxamic Acids of the Indole Series"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 6, Jun 73, pp 756-758

Abstract: 3-Indolyl-aceto-, propio-, and butyrohdroxamic acids were obtained by reacting the ethyl esters of 3-indolyl-acetic, -propionic, and -butyric acid with hydroxylamine in the presence of KOH. On subjecting the hydroxamic acids to a Lossen rearrangement, symmetrical bis(3-indolyl-alkyl) ureas were obtained. Upon the Lossen rearrangement of 3-indolyl-propiohydroxamic acid, N,0-bis/2-(3-indolyl)ethylcarbamoyl/-N-/3-(3-indolyl)propionyl/hydroxylamine was also isolated. The reaction of the hydroxamic acids with phenyl isocyanate led to O-(N-phenylcarbamoyl)-3-indolyl-alkylhydroxamic acids.

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UDC 537.581:535.211

USSR

ARIFOV, U. A., KAZANSKIY, V. V., LUGOVSKOY, V. B., KAYUMOVA, Z. A.

"Integral and Subpulse Emissions Caused by Laser Radiation"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, No. 3, Mar 71,
pp 599-602

Abstract: The nature of the emission of charged and neutral particles under the action of solid-state laser radiation on metal targets is investigated. It was found that the emission is determined both by the properties of the irradiated material and by the characteristics of the laser pulse. When a laser is operating in a free generation mode, the emission varies with an increase in the power of the radiation incident on the target. Initially, subpulse emission associated with the characteristics of the space-time structure of the radiation arises at small values of the power density. This appears in the form of short (0.1-1 μ sec) current pulses which coincide in time with the laser subpulses. As the power is increased, an integral emission appears along with the subpulse emission that is caused by the total action of a large number of subpulses. The integral emission is in the form of an extended (0.1-2 μ sec), continuous pulse with a characteristic

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ARIFOV, U. A., et al, Izvestiya Akademii nauk SSSR, Seriya Fizicheskaya, No. 3, .
Mar 71, pp 599-602

displacement relative to the maximum of the laser radiation. The emission pulses were divided into four types, depending on the form of their dependence on time: (1) subpulses of apparent thermoelectron origin; (2) short symmetric pulses with maxima coinciding with the maximum values of the laser intensity; (3) subpulses of complex form apparently formed through the superposition of pulses of the first and second types; (4) asymmetric pulses with a single undisplaced maximum (it is possible that these subpulses or some of them belong to the third type).

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USSR

SUD'BINA, Ye. N., PULATOVA, M. K., and KAYUSHIN, I. P., Institute of Biological Physics, Academy of Sciences USSR, Pushchino

"Electron Spin Resonance Investigation of the Nature and Properties of Paramagnetic Centers in Gamma-Irradiated Proteins"

Moscow, Biofizika, Vol 16, Vyp 4, Jul/Aug 71, pp 596-602

Abstract: Polycrystalline proteins -- serum albumin, egg albumin, lysozyme, pepsin, and trypsin -- and silk fibroin were irradiated with 10 Mrad of Co^{60} gamma rays at -196°C . Electron spin resonance investigations revealed formation of the following paramagnetic centers: trapped electrons, anion radicals with unpaired electrons located at the S-S bonds, in aliphatic amino acid residues with unpaired electrons, and at the alpha carbon atoms of peptide chains from which hydrogen atoms are detached. After irradiation at room temperature, paramagnetic centers are formed on H-binding oxygen atoms with unpaired electrons and on RS groups.

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